OPERATING INSTRUCTIONS

OPERATING INSTRUCTIONS
Includes foreseen use, work stations, putting into service, operating, dismantling, assembly and safety rules.

IMPORTANT
Read these instructions carefully before installing, operating, servicing or repairing this tool. Keep these instructions in a safe accessible place.

MANUFACTURER/SUPPLIER
Polar Tools ApS
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PRODUCT TYPE
1/2" PROFESSIONAL COMPOSITE IMPACT WRENCH

MODEL
6100-0012 / 6100-1012

CE

ORIGINAL INSTRUCTION

FORESEEN USE OF TOOL
The impact wrench is designed for the tightening and loosening of threaded fasteners within the range as specified by manufacturer. It should only be used in conjunction with suitable impact type 1/2" (13 mm) square female driver nut running sockets. Only use sockets which are of the impact type.
It is allowed to use suitable extension bars, universal joints and socket adaptors between the square output driver of the impact wrench and the square female drive of the socket. Do not use the tool for any other purpose than that specified without consulting the manufacturer or the manufacturer's authorized supplier. To do so may be dangerous.
Never use an impact wrench as hammer to dislodge or straighten cross threaded fasteners. Never attempt to modify the tool for other uses and never modify the tool for even its recommended use as a nut runner.

WORK STATIONS
The tool should only be used as a handheld hand operated tool. It is always recommended that the tool is used when standing on the solid floor. It can be in other positions but before any such use, the operator must be in a secure position having a firm grip and footing and be aware that when loosening fasteners the tool can move quite quickly away from the fastener being undone. An allowance must always be made for this rearward movement so as to avoid the possibility of hand/arm/body entrapment.

1. Do not connect a quick connect coupling directly to the tool but use a whip or a leader hose of say approximately 12 inches (300 mm) length. Do not connect the tool to the airline system without incorporating an easy to reach and operate air shut off valve.
The air supply should be lubricated. It is strongly recommended that an air filter, regulator, lubricator (FRL) is used as shown in Figure 1 as this will supply clean, lubricated air at the correct pressure to the tool. Details of such equipment can be obtained from your supplier. If such equipment is nit used then the tool should be lubricated by shutting off the air supply to the tool, depressurizing the line by pressing the trigger on the tool. Disconnect the air line and pour into the intake bushing a teaspoonful (5 ml) of a suitable pneumatic motor lubricating oil preferably incorporating a rust inhibitor. Reconnect tool to air supply and run tool slowly for a few seconds to allow air to circulate the oil. If tool is used frequently lubricate on daily basis and if tool starts to slow or lose power. When lubricating, also ensure that screen in intake bushing is clean.
It is recommended that the air pressure at the tool whilst the tool is running at 90 psi/6.3 bar. The tool can run at lower and higher pressure with the maximum permitted working air pressure of 100 psi/7.0 bar. For a lower air pressure the tool will give a lower output for a given setting of the sir regulator set for 90 psi/6.3bar. operation and increased output for higher pressure. Hence it is possible that changes in supply pressure can give situation where the fastener is under over

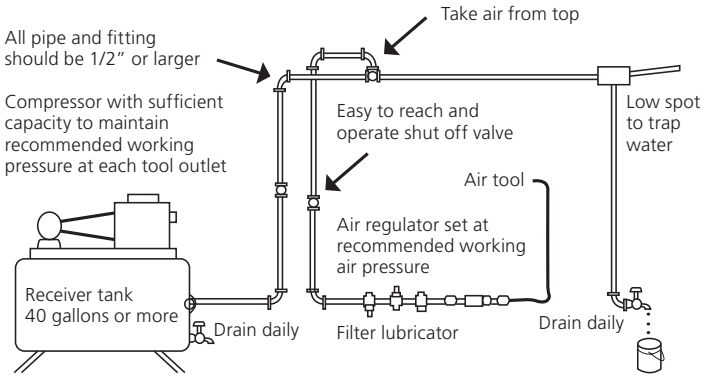
tightened. For changes in pressure, the regulator position and application should be reassessed. It is recommended that joint tightness of the threaded fastener assembly be checked with suitable measuring equipment. Follow the national legislation of waste disposal.

PUTTING INTO SERVICE

AIR SUPPLY

Use a clean lubricated air supply that will give a measured air pressure at the tool of 90 psi/ 6.3 bar when the tool is running with the trigger fully depressed And the air regulator in its maximum opening flow position. Use recommended hose size and length. It is recommended that the tool is connected to the air supply as shown in figure 1.

FIGURE 1.


Take air from top
All pipe and fitting should be 1/2" or larger
Compressor with sufficient capacity to maintain recommended working pressure at each tool outlet
Easy to reach and operate shut off valve
Low spot to trap water
Air tool
Air regulator set at recommended working air pressure
Receiver tank 40 gallons or more
Drain daily
Filter lubricator
Drain daily

Recommended air supply system

OPERATING

The output of the impact wrench in prime working condition is governed by mainly three factors

a) The input air pressure

b) The time the impact wrench is operated on joint.
Normal time for joints of average tension requirement 3 to 5 seconds.

c) The setting of air regulator for a given joint at a given pressure operated for a given time.

The air regulator can be used to the regulate the output of the impact wrench if no other control means is available. It is strongly recommended that an external pressure regulator ideally as part of a fitter/ regulator/lubricator (FRL) is used to control air inlet pressure so that the pressure can be set to help control the tension required to be applied to the threaded fastener joint.

There is no consistent reliable torque adjustment on an impact wrench of this type. However, the air regulator can be used to adjust torque to the approximate tightness of known threaded joint. To set the tool to the desired torque, select an nut or screw of known tightness of the same size, thread pitch and thread condition as those on the job. Turn air regulator to low position, apply wrench to nut and gradually increase power (turn regulator to admit more air) until nut moves slightly in the direction it was originally set. The tool is now set to duplicate that tightness, note regulator setting for future use. When tightness nuts not requiring critical torque values, run nut up flush and then tighten an additional one-quarter to one-half turn(slight additional turning is necessary if gaskets are being clamped). For additional power needed on disassembly work, turn regulator to its fully open position. This impact wrench is rated a bolt size(please refer technical specification of tool). Rating must be down graded for spring U bolts, tie bolts, long cap screws, double depth nuts badly rusted conditions and spring fasteners as they absorb much of the impact power. When possible, clamp or wedge the bolt to prevent spring back.

Soak rusted nuts in penetrating oil and break rust seal before removing with impact wrench. If nut does not start to move in three to five seconds use a large size impact wrench. Do not use impact wrench beyond rated capacity as this will drastically reduce tool life.

Note: Actual torque on a fastener is directly related to joint hardness, tool speed, condition of socket and the time the tool is allowed to impact.

Use the simplest possible tool=to-socket hook up. Every connection absorbs energy and reduces power.

SAFE RULES WHEN USING AN IMPACT WRENCH

Read all these safety instructions before operating this product and save these instructions.

The tool has been manufactured in conformity with the instruction of EU machine directive. The EU mark will be considered void in the event of inexpert repairs, the use of non-original parts and in case of non-observance of the safety instructions in the user's manual.

GENERAL SAFETY RULES:

1. Watch the tool at all times when in use.
2. People under the influence of alcohol or drugs are not allowed to use, repair or maintain the tools.
3. Keep unqualified persons, children, etc. away from the tool.
4. Keep work area clean and with sufficient daylight or artificial lighting. The work area on which the machine is used must be cleaned up. Disorder is potential cause of accidents.
5. Danger of explosion. Never use oxygen and combustible gas as an air supply for the tool which many be ignited by spark and cause fire or explosion.
6. Never use gasoline or other flammable liquids to clean the tool.
7. Do not use air tools in potentially explosive atmospheres such as in the presence of flammable liquids, cleaning solvents, fluid energy or stored gases.
8. Do not expose air tools to rain. Do not use air tools in damp or wet locations.
9. When a fault or failure is detected, the tool must immediately be disconnected from the air supply and returned for repair.
10. It is not permitted to modify the tool in any way.
11. When not in use, keep tools in a dry place, either locked up or i a high place, out of the reach of children.
12. Do not force small air tools to do the job of a heavy-duty task. Do not use air tool for purpose of which was not intended.
13. Wear suitable ear protection at environment noise level>80db(A) and safety spectacles when using the tool. Always wear approved safety goggles if work in dusty. This also applies to other persons in the near by vicinity.
14. Do not wear loose clothing or jewelry. They can be caught in moving parts. Rubber gloves and non-skid foot wear are recommended when working outdoors. Wear protecti8ve hair covering to contain long hair.
15. Keep proper footing and balance at all times.
16. Use clamps or a vice to hold work-piece. It is safer than using your hand and free both hands to operate the air tool.
17. When not use, before performing service or changing accessories please disconnect tool from air compressor.
18. Do not carry plugged in air tool with your finger on the switch trigger. Be sure switch is in the "OFF" position when connecting to air supply.
19. Watch what you are doing. Use common sense, even unsafe situation or unbalanced positions, particularly when you are tired.
20. Air powered tools can vibrate in use. Vibration, repetitive motions or uncomfortable positions may be harmful to your hands or arms. Stop using any tool if discomfort, tingling feeling or pain occurs. Seek medical advice before resuming use.
21. For multiple hazards, read and understand the safety instructions before installing, operating, repairing, maintaining, changing accessories on, or working near the assembly power tool for threaded fasteners. Failure to do so can result in serious bodily injury.
22. Only qualified and trained operators should install, adjust or use the assembly power tool for threaded fasteners.
23. Do not modify this assembly power tool for threaded fasteners. Modifications can reduce the effectiveness of safety measures and increase the risks to the operator.
24. Do not discard the safety instructions; give them to the operator.
25. Do not use the assembly power tool for threaded fasteners if it has been damaged.
26. Tools shall be inspected periodically to verify that the ratings and markings required by this part of EN ISO 11148 are legibly marked on the tool. The employer/user shall contact the manufacturer to obtain replacement marking labels when necessary.

SAFETY PRECAUTIONS FOR PROJECTILE HAZARDS

1. Failure of the workpiece, of accessories or even of the inserted tool itself can generate high-velocity projectiles.
2. Always wear impact-resistant eye protection during the operation of the assembly power tool for threaded fasteners. The grade of protection required should be assessed for each use.
3. Ensure that the workpiece is securely fixed

SAFETY PRECAUTIONS FOR ENTANGLEMENT HAZARD

1. Entanglement hazards can result in choking, scalping and/or lacerations if loose clothing, personal jewelry, neckwear, hair or gloves are not kept away from the tool and accessories.
2. Gloves can be become entangled with the rotating drive, causing severed or broken fingers.
3. Rotating drive sockets and drive extensions can easily entangle rubber-coated or metal-reinforced gloves.
4. Do not wear loose-fitting gloves or gloves with cut or frayed fingers.
5. Never hold the drive, socket or drive extension.
6. Keep hands sway from rotating drives.

SAFETY PRECAUTIONS FOR OPERATING HAZARDS

1. The use of the tool can expose the operator's hands to hazards including crushing, impacts, cuts and abrasions and heat. Wear suitable gloves to protect hands.
2. Operators and maintenance personnel shall be physically able to handle the bulk, weight and power of the tool.
3. Hold the tool correctly: be ready to counteract normal or sudden movements and have both hands available.
4. Maintain a balanced body position and secure footing.
5. Release the start-and-stop device in the case of an interruption of the energy supply.
6. Use only lubricants recommended by the manufacturer.
7. Do not use in confined spaces and beware of crushing hands between tool and workpiece, especially when unscrewing.

SAFETY PRECAUTIONS FOR REPETITIVE MOTIONS HAZARDS

1. When using a power tool for, the operator can experience discomfort in the hands, arms, shoulders, neck, or other parts of the body.
2. While using an assembly power tool for threaded fasteners, the operator should adopt a comfortable posture whilst maintaining secure footing and avoiding awkward or off-balanced postures. The operator should change posture during extended tasks, which can help avoid discomfort and fatigue.
3. If the operator experiences symptoms such as persistent or recurring discomfort, pain, throbbing, aching, tingling, numbness, burning sensations or stiffness, these warning signs should not be ignored. The operator should tell the employer and consult a qualified health professional.

SAFETY PRECAUTIONS FOR ACCESSORY HAZARDS

1. Disconnect the assembly power tool for threaded fasteners from the energy supply before changing the inserted tool or accessory.
2. Do not touch sockets or accessories during impacting, as this increases the risk of cuts, burns or vibration injuries.
3. Use only sizes and types of accessories and consumables that are recommended by the assembly power tool for threaded fasteners manufacturer.
4. Use only impact-wrench-rated sockets in good condition, as poor condition or hand sockets and accessories used with impact wrenches can shatter and become a projectile.

SAFETY PRECAUTIONS FOR WORKPLACE HAZARDS

1. Slips, trips and falls are major causes of workplace injury. Be aware of slippery surfaces caused by the use of the tool and also of trip hazards caused by the air line or hydraulic hose.
2. Proceed with care in unfamiliar surroundings. Hidden hazards, such as electricity or other utility lines, can exist.
3. The assembly power tool for threaded fasteners is not intended for use in potentially explosive atmospheres and is not insulated against coming into contact with electric power.
4. Make sure there are no electrical cables, gas pipes, etc., that can cause a hazard if damaged by use of the tool

SAFETY PRECAUTIONS FOR DUST AND FUME HAZARDS

1. Dust and fumes generated when using assembly power tools for threaded fasteners can cause ill health (for example, cancer, birth defects, asthma and/or dermatitis); risk assessment and implementation of appropriate controls for these hazards are essential.
2. Risk assessment should include dust created by the use of the tool and the potential for disturbing existing dust.
3. Direct the exhaust so as to minimize disturbance of dust in a dust-filled environment.
4. Where dust or fumes are created, the priority shall be to control them at the point of emission.
5. All integral features or accessories for the collection, extraction or suppression of airborne dust or fumes should be correctly used and maintained in accordance with the manufacturer's instructions.
6. Use respiratory protection in accordance with employer's instructions and as required by occupational health and safety regulations

SAFETY PRECAUTIONS FOR NOISE HAZARDS

1. Unprotected exposure to high noise levels can cause permanent, disabling hearing loss and other problems, such as tinnitus (ringing, bussing, whistling or humming in the ears).
2. Risk assessment and implementation of appropriate controls for these hazards are essential.
3. Appropriate controls to reduce the risk may include actions such as damping materials to prevent workpieces from "ringing".
4. Use hearing protection in accordance with employer's instructions and as required by occupational health and safety regulations.
5. Operate and maintain the assembly power tool for threaded fasteners as recommended in the instruction handbook, to prevent an unnecessary increase in noise levels.
6. If the assembly power tool for threaded fasteners has a silencer, always ensure it is in place and in good working order when the assembly power tool for threaded fasteners is operating.
7. Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in noise.

SAFETY PRECAUTIONS FOR VIBRATION HAZARDS

1. Exposure to vibration can cause disabling damage to the nerves and blood supply of the hands and arms.
2. Keep the hands away from the sockets.
3. Wear warm clothing when working in cold conditions and keep your hands warm and dry.
4. If you experience numbness, tingling, pain or whitening of the skin in your fingers or hands, stop using the assembly power tool for threaded fasteners, tell your employer and consult a physician.
5. Operate and maintain the assembly power tool for threaded fasteners as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels.
6. Do not use worn or ill-fitting sockets or extensions, as this is likely to cause a substantial increase in vibration.
7. Select, maintain and replace the consumable/inserted tool as recommended in the instruction handbook, to prevent an unnecessary increase in vibration levels.
8. Sleeve fittings should be used where practicable.
9. Support the weight of the tool in a stand, tensioner or balancer, if possible.
10. Hold the tool with a light but safe grip, taking account of the required hand reaction forces, because the risk from vibration is generally greater when the grip force is higher.

ADDITIONAL SAFETY INSTRUCTIONS FOR PNEUMATIC POWER TOOLS

1. Always shut of air supply, drain hose of air pressure and disconnect tool from air supply when not in use, before changing accessories or when making repairs.
2. Never direct air at yourself or anyone else.
3. Whipping hoses can cause severe injury. Always check for damaged or loose hoses and fittings.
4. Cold air shall be directed away from the hands.
5. Do not use quick-disconnect couplings at tool inlet for impact and air-hydraulic impulse wrenches. Use hardened steel (or material with comparable shock resistance) threaded hose fittings.
6. Whenever universal twist couplings (claw couplings) are used, lock pins shall be installed and whip check safety cables shall be used to safeguard against possible hose-to-tool and hose-and hose connection failure.
7. Do not exceed the maximum air pressure stated on the tool.
8. For torque-control and continuous-rotation tools, the air pressure has a safety critical effect on performance. Therefore, requirements for length and diameter of the hose shall be specified.
9. Never carry an air tool by the hose.

WARNING

1. The tool shall not be used in explosive atmospheres unless specially designed for that purpose.
2. The tool is not electrically insulated. Do not use where there is a possibility of coming into contact with live electricity.
3. Unexpected tool movement due to reaction forces or breakage of inserted tool or reaction bar may cause injuries.
4. Preferably shut off the air supply before changing socket or at least ensure that the hands are well clear of the operating trigger.
5. Be aware of the risk of crushing by torque between a reaction bar and the workplace.
6. When loosening fasteners first ensure that there is sufficient clearance behind the tool to avoid hand entrapment. The tool will move away from the threaded joint as the nut/bolt etc. is loosened and rides up the thread moving the tool with it.
7. There is a risk of being injured specially when unscrewing in confined work place if hands are not kept away from the reaction bar. Keep hands sway from the nut runner socket.
8. In case of nut runner socket failure, it may danger to person from high speed splinters being emitted fro impact wrench.
9. Be aware of the whipping compressed air hose.
10. Always ensure that the reverse valves is in the correct position before operating the tool. Do not run the tool unless the socket is first located on the joint.
11. Prevent the loose clothes, long hair, or any other personal accessories from closing to the moving part to reduce the risk of being caught trapped or drawn in the rotating spindle.

MAINTENANCE INSTRUCTION

1. Dry the filter and the air inlet of the tool.
2. Lubricate the quick connect coupling to prevent blocking.
3. Air tool require lubrication throughout the life of the tool. The air motor and bearing uses compressed air to start the tool. The moisture in compressed air will rust the air motor; you must lubricate the motor daily.
4. Avoid storing the tool in a location subject to high humidity. If the tool is left as it is used, the residual moisture inside the tool can cause rust.
5. Before storage, lubricate tool and run it for a few seconds.
6. Regular inspection of spindles, threads, and clamping devices in respect of wear and tolerances for location of abrasive products.
7. If the tool is too seriously damage to be used anymore, recycle raw material instead of disposing as waste. The machine, accessories and packaging should be sorted for environmental-friendly recycling. Check with your local authority or retailer for recycling advice.

EC DECLARATION OF CONFORMITY

WE:
POLAR TOOLS APS
Soldalen 9, DK-7100 Vejle, Denmark

Declare in sole responsibility that the equipment

EQUIPMENT: AIR IMPACT WRENCH

MODEL/SERIAL NO.: 6100-0012 / 6100-1012

to which this declaration applies, complies with these normative documents:

MACHINERY DIRECTIVE: 2006/42/EC

and conforms to the following EN standards,

EN ISO 12100:2010
EN ISO 11148-6:2010

Read the operator's instructions before operating the tool.

Wear eye protection device.

Wear ear protection device.

Authorized representative established within the EU(if applicable):

Company Name: Polar Tools Aps

Company Address: Soldalen 9, DK-7100 Vejle, Denmark

Person responsible for compiling the technical file established within the EU:

Name, Surname: Mikael Linde

Address: Jens Grøns Vej 1, DK-7100 Vejle, Denmark

Note: This declaration becomes invalid, if technical or operational modifications are introduced without the manufacturers consent.

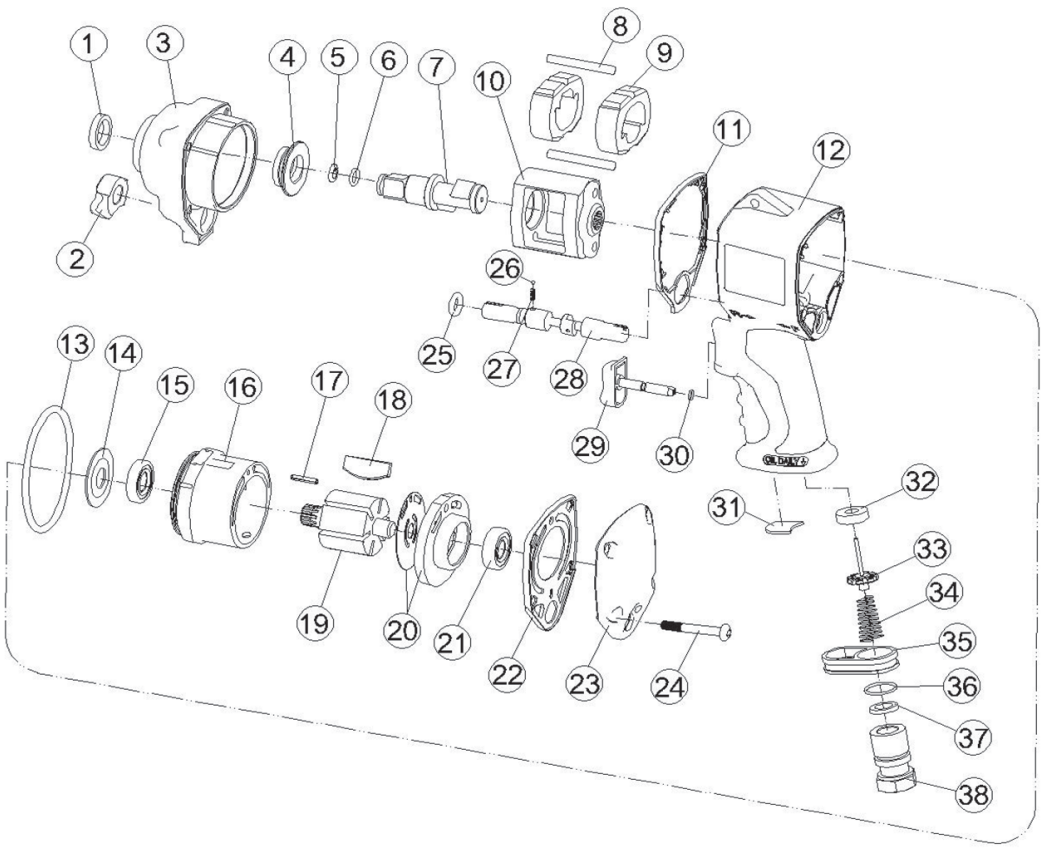
Name and Signature/Position Title

Mikael Linde, Owner

Date and place

Denmark, December 12, 2012

6100-0012 1/2" STUBBY COMPOSITE IMPACT WRENCH



TECHNICAL SPECIFICATION

PRODUCT TYPE 1/2" stubby professional composite impact wrench

MODEL: 6100-0012

RPM (R/MIN): 9000 ± 10%

WEIGHT: 1.30 kg 2.87 lbs

AIR PRESSURE: 6.3 bar (90 PSI)

RECOMMENDED MAXIMUM HOSE LENGTH: 30 ft / 10 m

RECOMMENDED MINIMUM HOSE BORE DIAMETER: 3/8" / 10 mm

NOISE LEVEL:

	LOAD	NO LOAD	
SOUND PRESSURE LEVEL	94.2	89.1	dB (A)
SOUND POWER LEVEL	105.2	100.1	dB (A)

MEASUREMENT UNCERTAINTY: K = 3dB

Tested in accordance with EN ISO 15744

RECOMMENDED PERSONAL SAFETY EQUIPMENT

VIBRATION LEVEL: 9.69 m/sec^2

MEASUREMENT UNCERTAINTY: K = 1.5 m/sec2

Tested in accordance with EN ISO 28927-2

OTHER DATA:

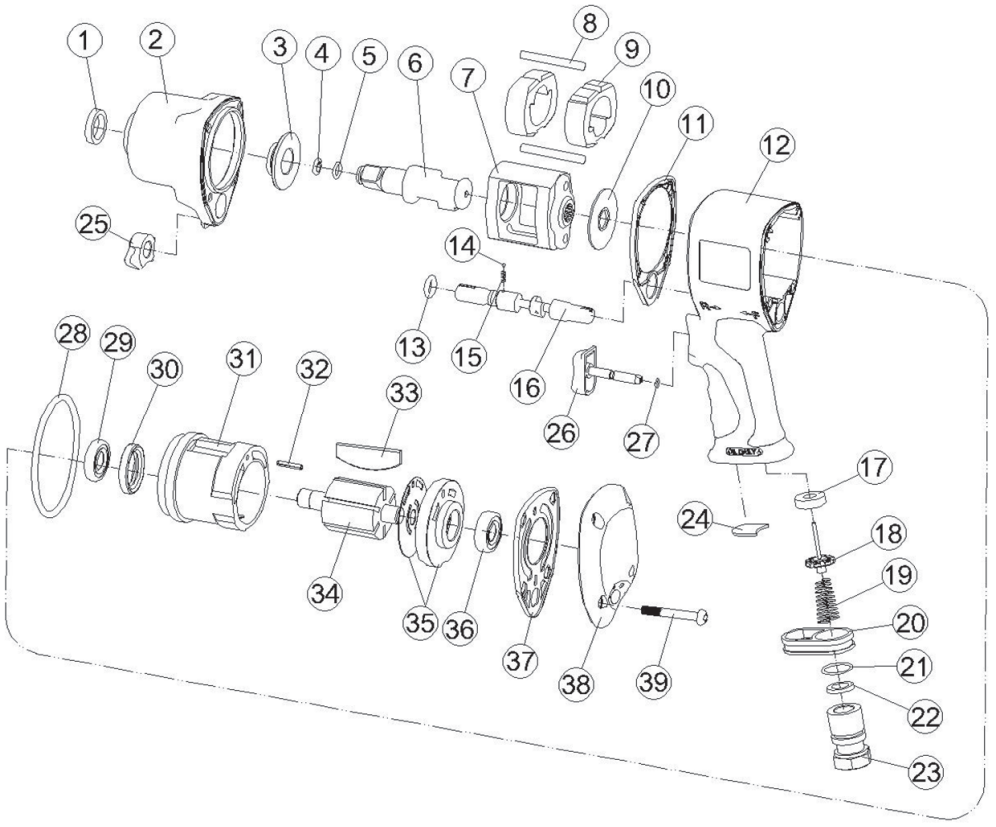
AIR INLET	1/4" (6.3 mm)
BOLT CAPACITY	1/2" 13 mm
TORQUE	450 ft. lb 62 kg/m 610 Nm
AVERAGE AIR CONSUMPTION	4.2 cfm 0.12 m^3/min
OVERALL LENGTH	4.81" (122 mm)
OVERALL WIDTH	2.52" (64 mm)
OVERALL HEIGHT	7.80" (198 mm)
SQUARE DRIVE	1/2"
CLUTCH TYPE	Twin hammer

USE:

Safety glasses and ear protectors

PARTS NO.	DESCRIPTION	Q'TY
P6100-0012-01	Oil Seal	1
P6100-0012-02	Regulator Knob	1
P6100-0012-03	Hammer Case	1
P6100-0012-04	Bushing	1
P6100-0012-05	Anvil Collar	1
P6100-0012-06	O-Ring	1
P6100-0012-07	Anvil (1/2" DR)	1
P6100-0012-08	Hammer Pin	2
P6100-0012-09	Hammer Dog	2
P6100-0012-10	Hammer Cage	1
P6100-0012-11	Front Gasket	1
P6100-0012-12	Motor Housing	1
P6100-0012-13	O-Ring	1
P6100-0012-14	Washer	1
P6100-0012-15	Ball Bearing	1
P6100-0012-16	Cylinder	1
P6100-0012-17	Spring Pin	1
P6100-0012-18	Rotor Blade	6
P6100-0012-19	Rotor	1
P6100-0012-20	Rear Plate	1
P6100-0012-21	Ball Bearing	1
P6100-0012-22	Rear Gasket	1
P6100-0012-23	Rear Cover	1
P6100-0012-24	Screw	4
P6100-0012-25	O-Ring	1
P6100-0012-26	Steel Ball	1
P6100-0012-27	Spring	1
P6100-0012-28	Reverse Valve	1
P6100-0012-29	Trigger	1
P6100-0012-30	O-Ring	1
P6100-0012-31	Muffler	1
P6100-0012-32	Retainer	1
P6100-0012-33	Valve Stem	1
P6100-0012-34	Spring	1
P6100-0012-35	Exhaust Deflector	1
P6100-0012-36	O-Ring	1
P6100-0012-37	Washer	1
P6100-0012-38A	Hose Adaptor -18NPT	
P6100-0012-38B	Hose Adaptor -19PT	1
P6100-0012-38C	Hose Adaptor -19PF(BSP)	

6100-1012 1/2" COMPOSITE IMPACT WRENCH



TECHNICAL SPECIFICATION

PRODUCT TYPE 1/2" professional composite impact wrench

MODEL: 6100-1012

RPM (R/MIN): 6500 ± 10%

WEIGHT: 2.02 kg 4.45 lbs

AIR PRESSURE: 6.3 bar (90 PSI)

RECOMMENDED MAXIMUM HOSE LENGTH: 30 ft / 10 m

RECOMMENDED MINIMUM HOSE BORE DIAMETER: 3/8" / 10 mm

NOISE LEVEL:

	LOAD	NO LOAD	
SOUND PRESSURE LEVEL	96.1	91.6	dB (A)
SOUND POWER LEVEL	107.1	102.6	dB (A)

MEASUREMENT UNCERTAINTY: K = 3dB

Tested in accordance with EN ISO 15744

RECOMMENDED PERSONAL SAFETY EQUIPMENT

VIBRATION LEVEL: 9.44 m/sec^2

MEASUREMENT UNCERTAINTY: K = 1.5 m/sec2

Tested in accordance with EN ISO 28927-2

OTHER DATA:

AIR INLET	1/4" (6.3 mm)
BOLT CAPACITY	5/8" 16 mm
TORQUE	900 ft. lb 125 kg/m 1220 Nm
AVERAGE AIR CONSUMPTION	4.8 cfm 0.14 m^3/min
OVERALL LENGTH	6.50" (165 mm)
OVERALL WIDTH	2.88" (73 mm)
OVERALL HEIGHT	8.27" (210 mm)
SQUARE DRIVE	1/2"
CLUTCH TYPE	Twin hammer

USE:

Safety glasses and ear protectors

PARTS NO.	DESCRIPTION	Q'TY
P6100-1012-01	Oil Seal	1
P6100-1012-02	Hammer Case	1
P6100-1012-03	Bushing	1
P6100-1012-04	Anvil Collar	1
P6100-1012-05	O-Ring	1
P6100-1012-06	Anvil	1
P6100-1012-07	Hammer Cage	1
P6100-1012-08	Hammer Pin	2
P6100-1012-09	Hammer Dog	2
P6100-1012-10	Washer	1
P6100-1012-11	Front Gasket	1
P6100-1012-12	Motor Housing	1
P6100-1012-13	O-Ring	1
P6100-1012-14	Steel Ball	1
P6100-1012-15	Spring	1
P6100-1012-16	Reverse Valve	1
P6100-1012-17	Retainer	1
P6100-1012-18	Valve Stem	1
P6100-1012-19	Spring	1
P6100-1012-20	Exhaust Deflector	1
P6100-1012-21	O-Ring	1
P6100-1012-22	Washer	1
P6100-1012-23A	Hose Adaptor -18NPT	
P6100-1012-23B	Hose Adaptor -19PT	1
P6100-1012-23C	Hose Adaptor -19PF(BSP)	
P6100-1012-24	Muffler	1
P6100-1012-25	Regulator Knob	1
P6100-1012-26	Trigger	1
P6100-1012-27	O-Ring	1
P6100-1012-28	O-Ring	1
P6100-1012-29	Ball Bearing	1
P6100-1012-30	Oil Seal	1
P6100-1012-31	Cylinder	1
P6100-1012-32	Spring Pin	1
P6100-1012-33	Rotor Blade	6
P6100-1012-34	Rotor	1
P6100-1012-35	Rear Plate	1
P6100-1012-36	Ball Bearing	1
P6100-1012-37	Rear Gasket	1
P6100-1012-38	Rear Cover	1
P6100-1012-39	Screw	4